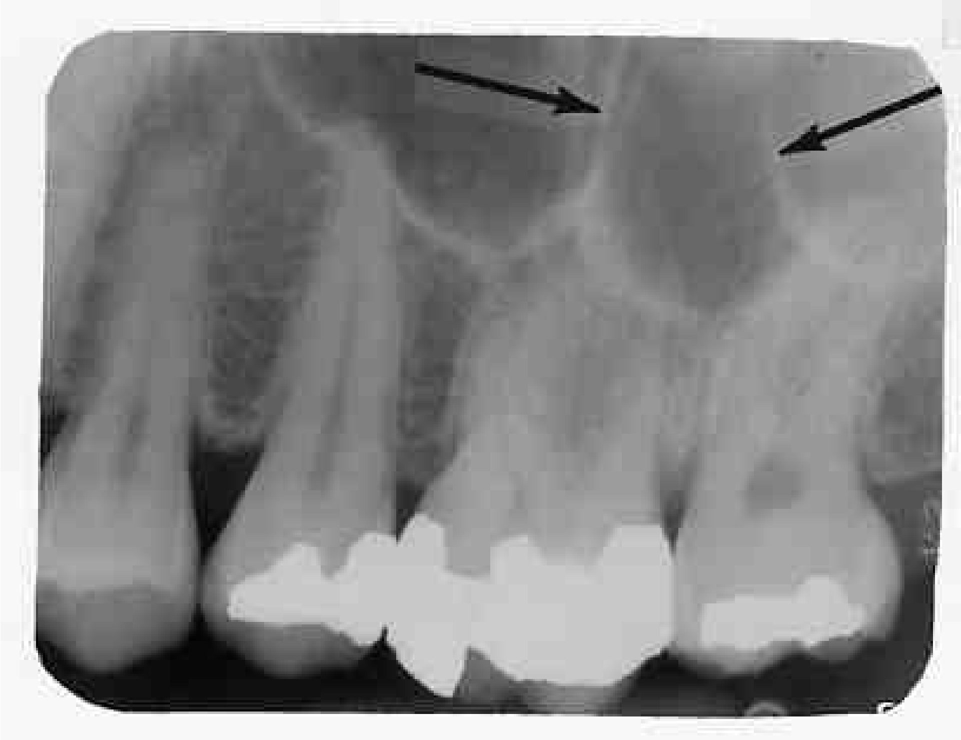
MAXILLARY SINUS

- Variations of Normal Anatomy
- Maxillary Sinusitis
- Mucous Retention Cyst
- Foreign Objects in Sinus
- Oro-antral Fistula
- Cysts: Odontogenic & Nonodontogenic
- Genetic, Metabolic & Tumor-like Diseases

Fig. 17-1



Septa in the maxillary sinus give a compartmentalized appearance to the sinus.

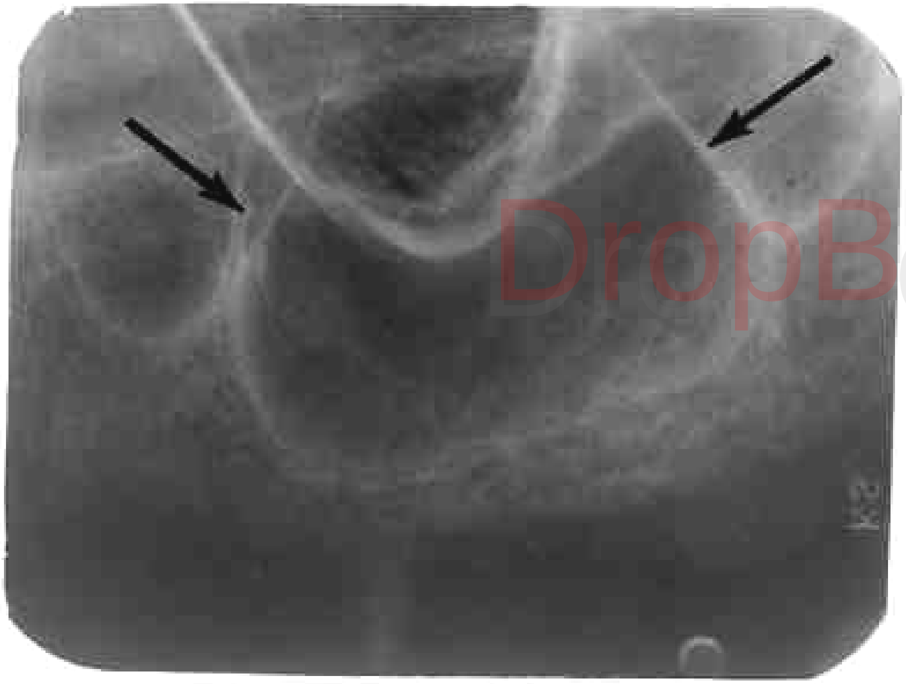
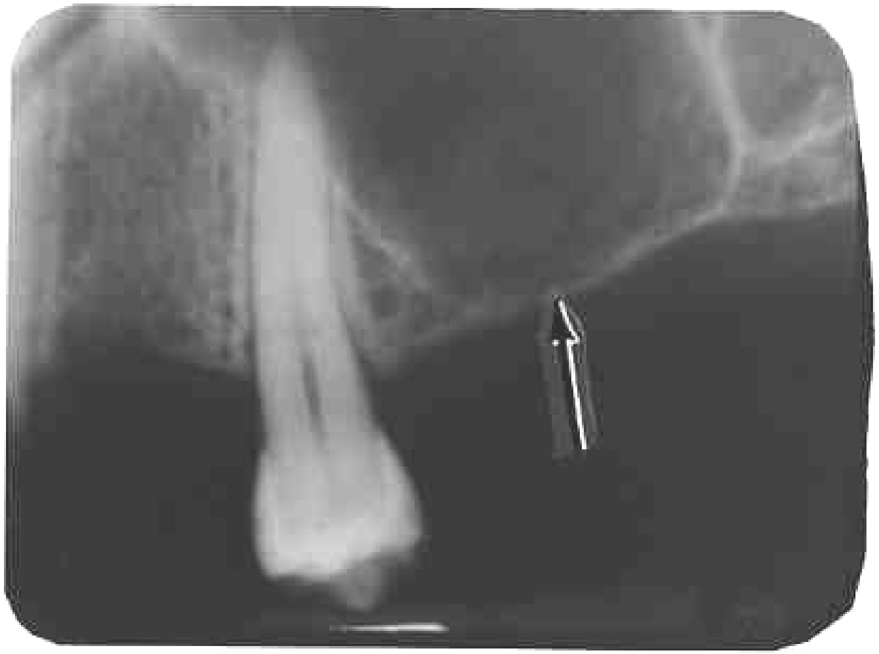


Fig. 17-2

Maxillary sinus showing septa that divide it into separate compartments.

Fig. 17-3

Pneumatization of the sinus. Pneumatization is the enlargement of a sinus by resorption of alveolar bone that formerly served to support a missing tooth or teeth and then occupies the edentulous space. A thin cortex remains over the alveolar ridge (arrow) to maintain a normal contour.



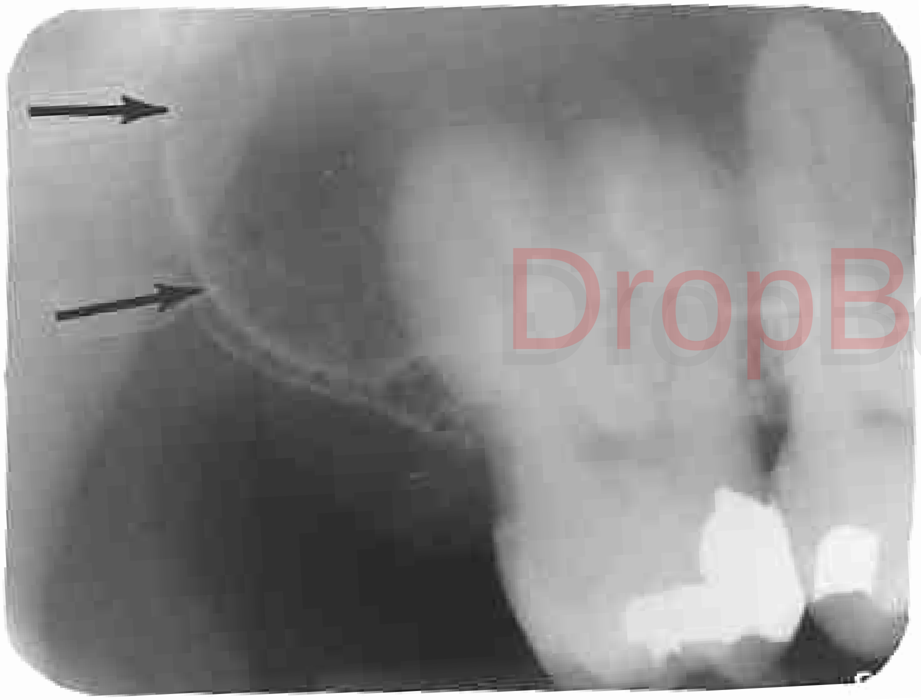


Fig. 17-4

Pneumatization of the sinus. Extension of the maxillary sinus into the tuberosity as a result of pneumatization.

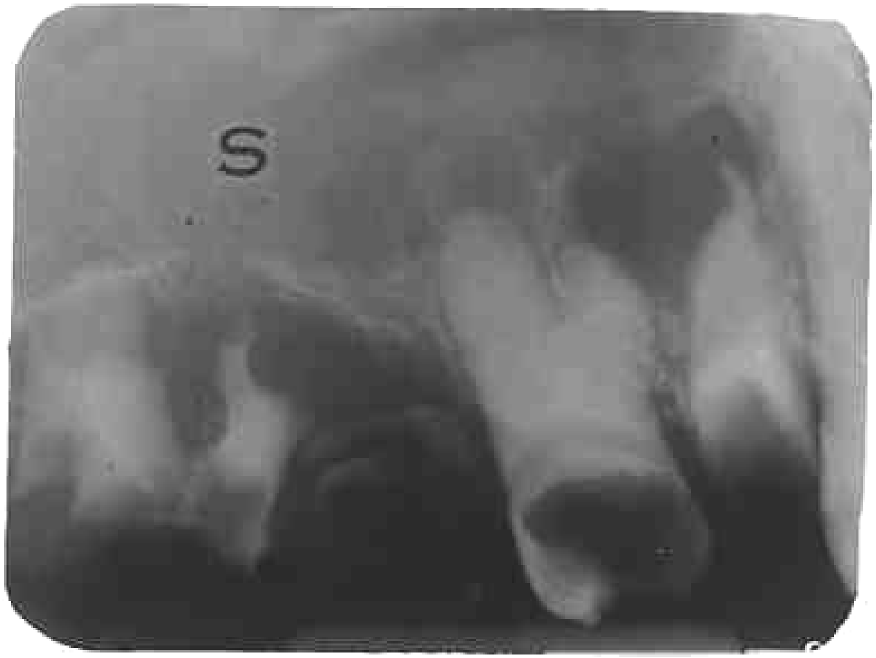


Fig. 17-5

Maxillary sinusitis caused by apical infection and extensive periodontal lesions involving the molars and premolar. Notice the cloudiness (radiopacity) of the sinus (s).

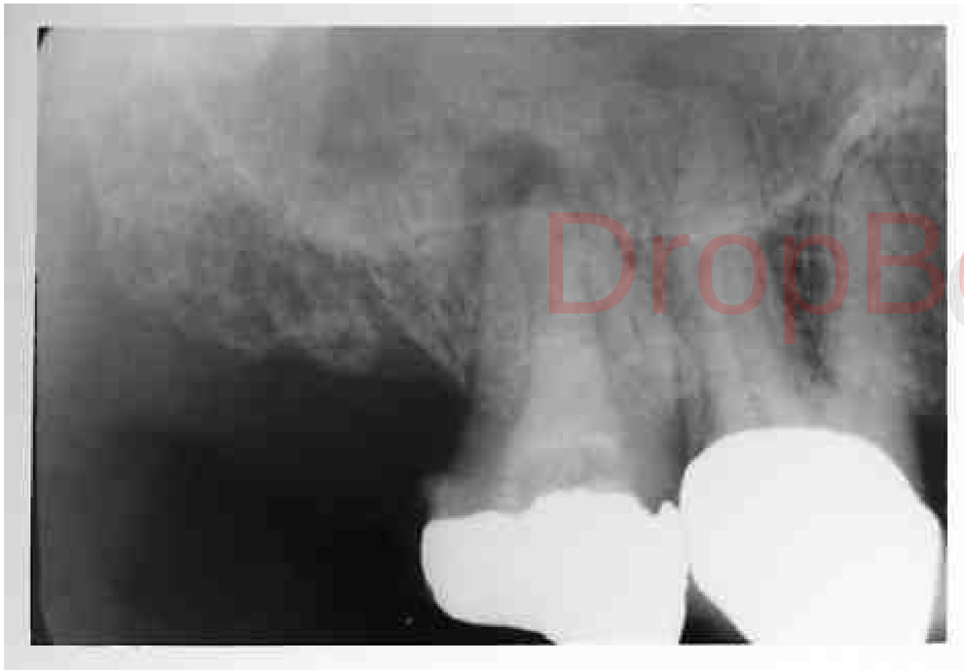


Fig. 17-6

Maxillary sinusitis caused by an apical inflammatory lesion (probably, a granuloma) at the root apices of the second molar. Notice the cloudiness (radiopacity) of the sinus.

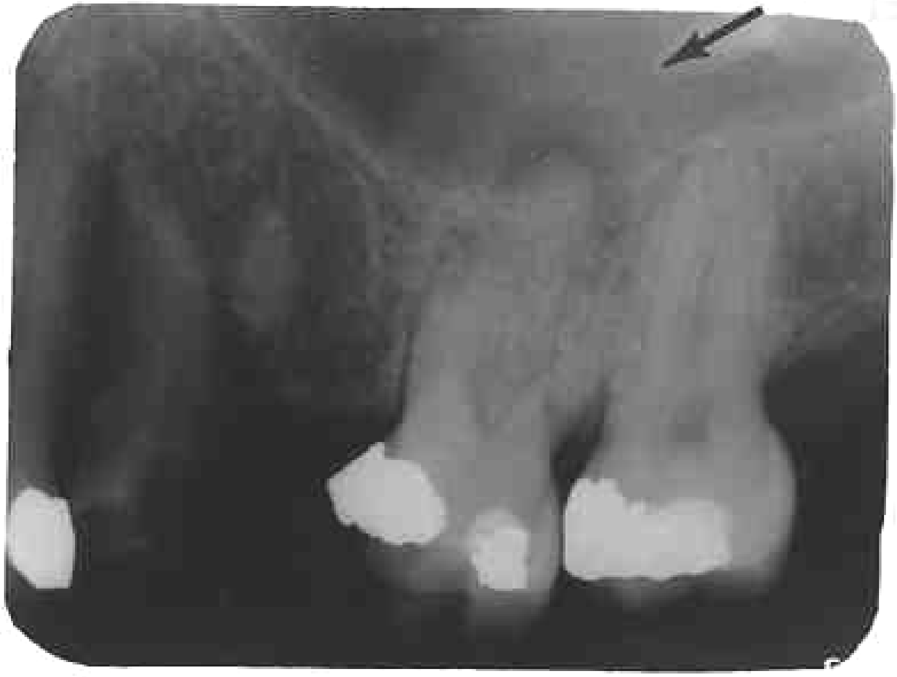


Fig. 17-7

Apical infection associated with the first molar. A thickened sinus mucosa (arrow) surrounds the lesion in response to the apical infection.

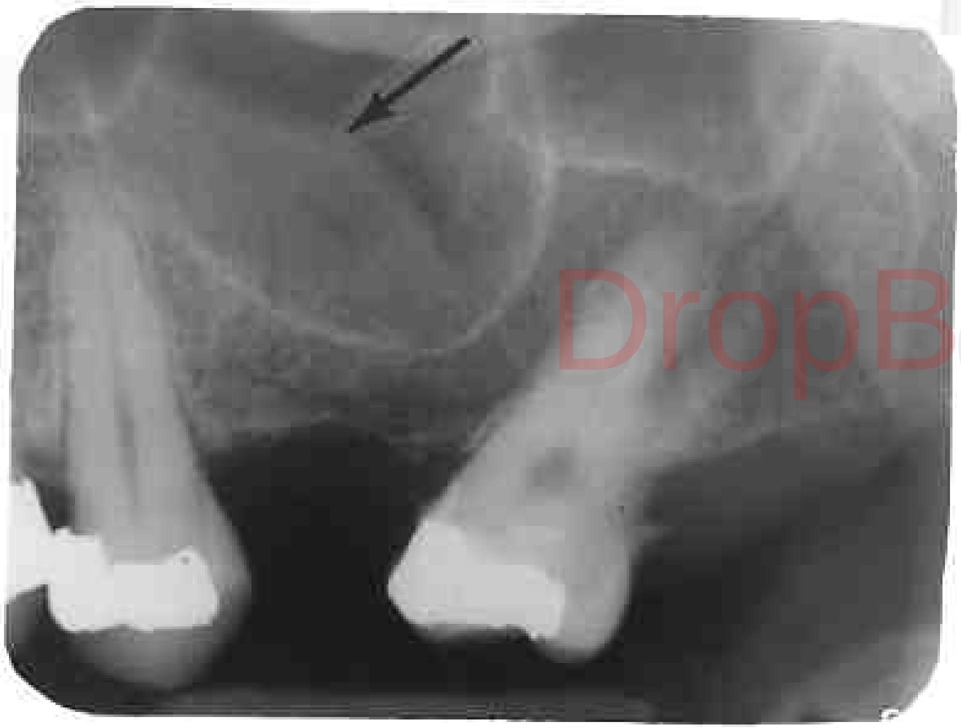


Fig. 17-8

Hyperplastic mucosa. Thickened sinus mucosa (swollen mucoperiosteum). The various causes of a hyperplastic mucosa are: infection (periapical, periodontal, perforation of antral floor and mucosa), allergy, chemical irritation, foreign body and facial trauma.

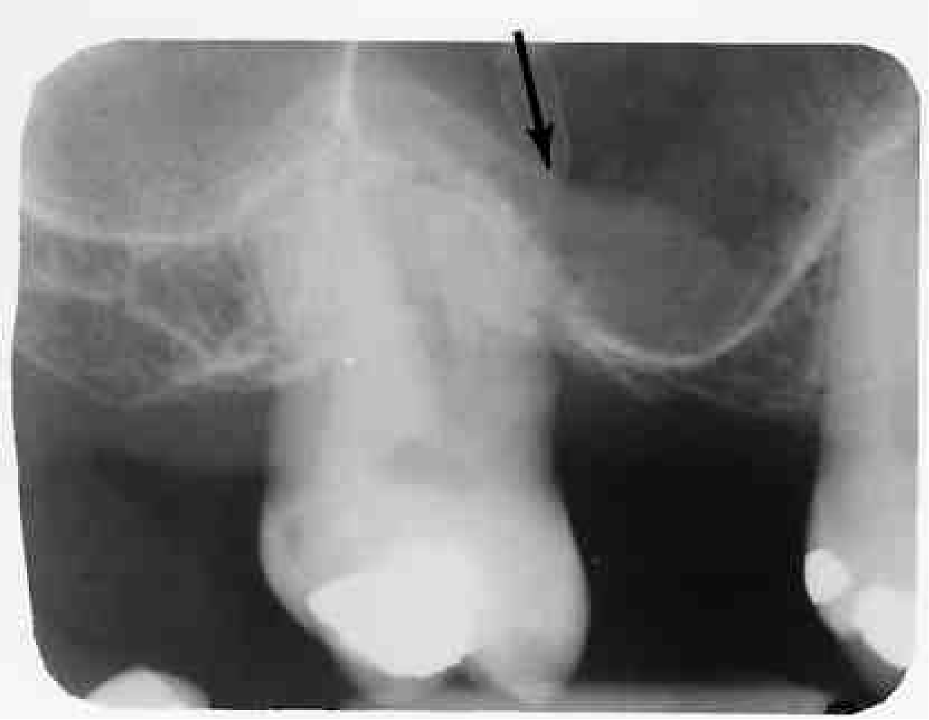


Fig. 17-9

Hyperplastic mucosa. Thickened sinus mucosa.

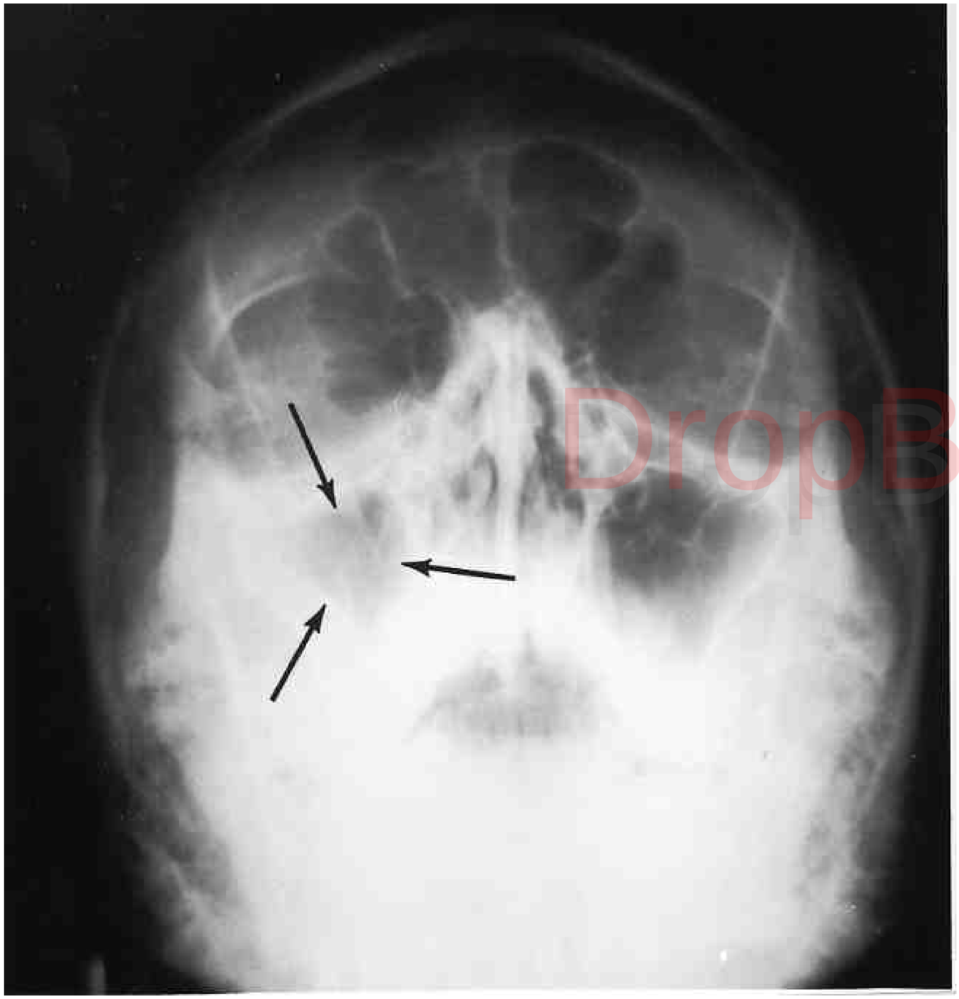
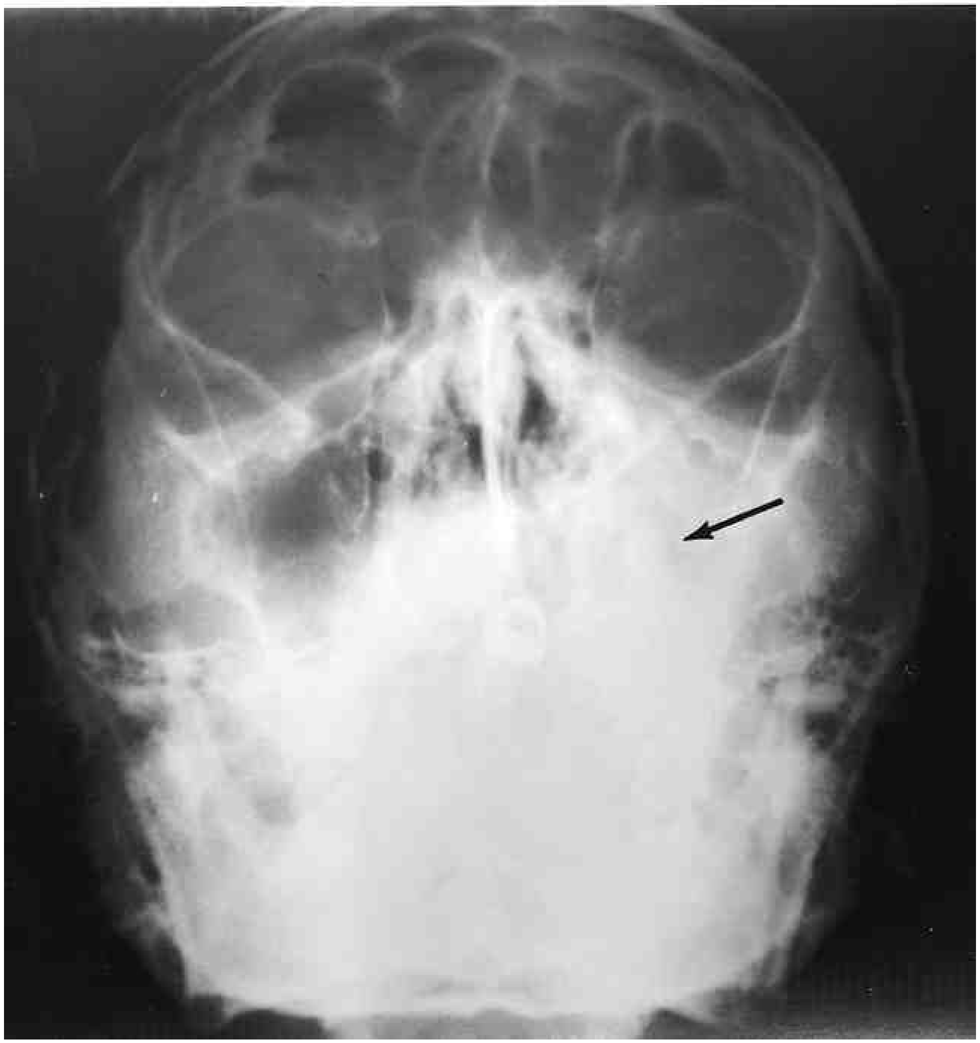


Fig. 17-10

Waters' view demonstrating thickened sinus mucosa (hyperplastic mucosa) of all the walls of the right maxillary sinus. The various causes are: infection (periapical, periodontal, perforation of the antral floor and mucosa), allergy, chemical irritation, foreign body, and facial trauma.

Fig. 17-11

Maxillary sinusitis. Waters' view shows the radiopacity (fluid) in the involved sinus and radiolucency in the normal sinus. The unaffected sinus has the same radiolucency as the orbits. The radiopacity in the affected sinus is caused by the presence of fluid in the sinus. The most common causes of fluid in a sinus are pus caused by infection, and blood resulting from trauma (fractures).



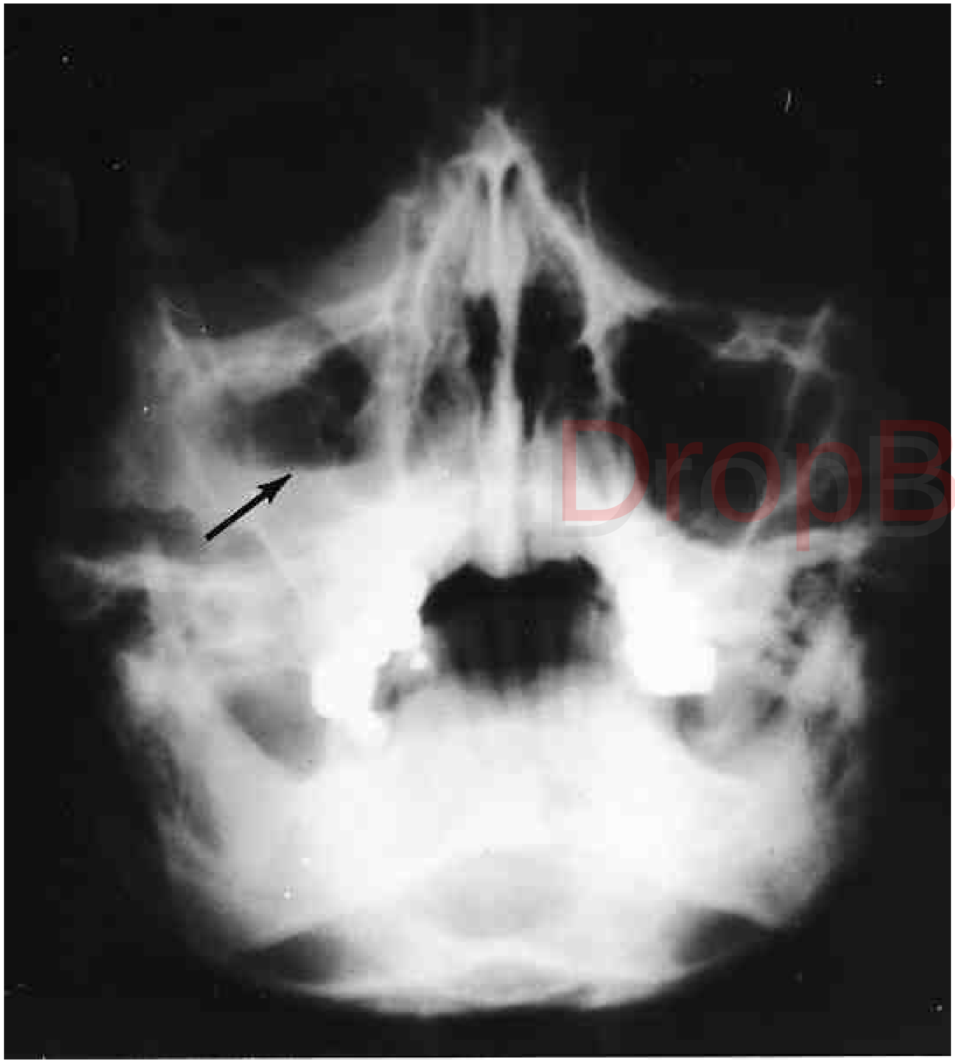
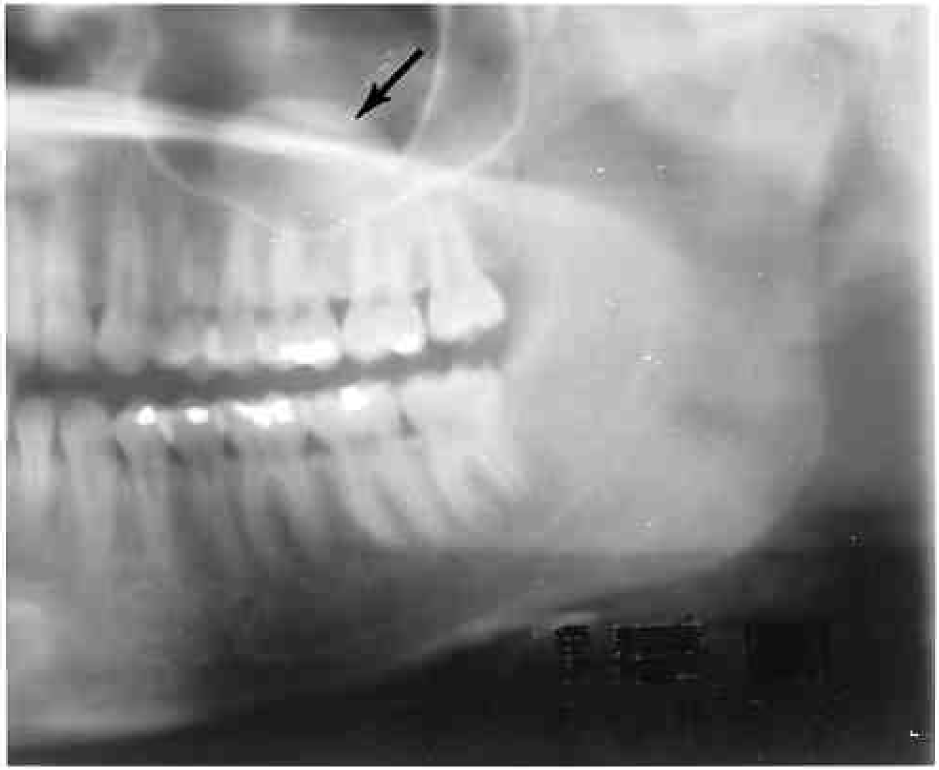


Fig. 17-12

Maxillary sinusitis exhibiting a fluid level (arrow) in the right antrum.

Fig. 17-13



Mucous retention cyst (antral retention cyst) seen as a dome-shaped lesion on the floor of the sinus. It is usually asymptomatic but may sometimes cause some pain and tenderness in the teeth and face over the sinus. In some cases the cyst disappears spontaneously due to rupture as a result of abrupt pressure changes from sneezing or "blowing" of the nose. Later on, the cyst may reappear after a few days.

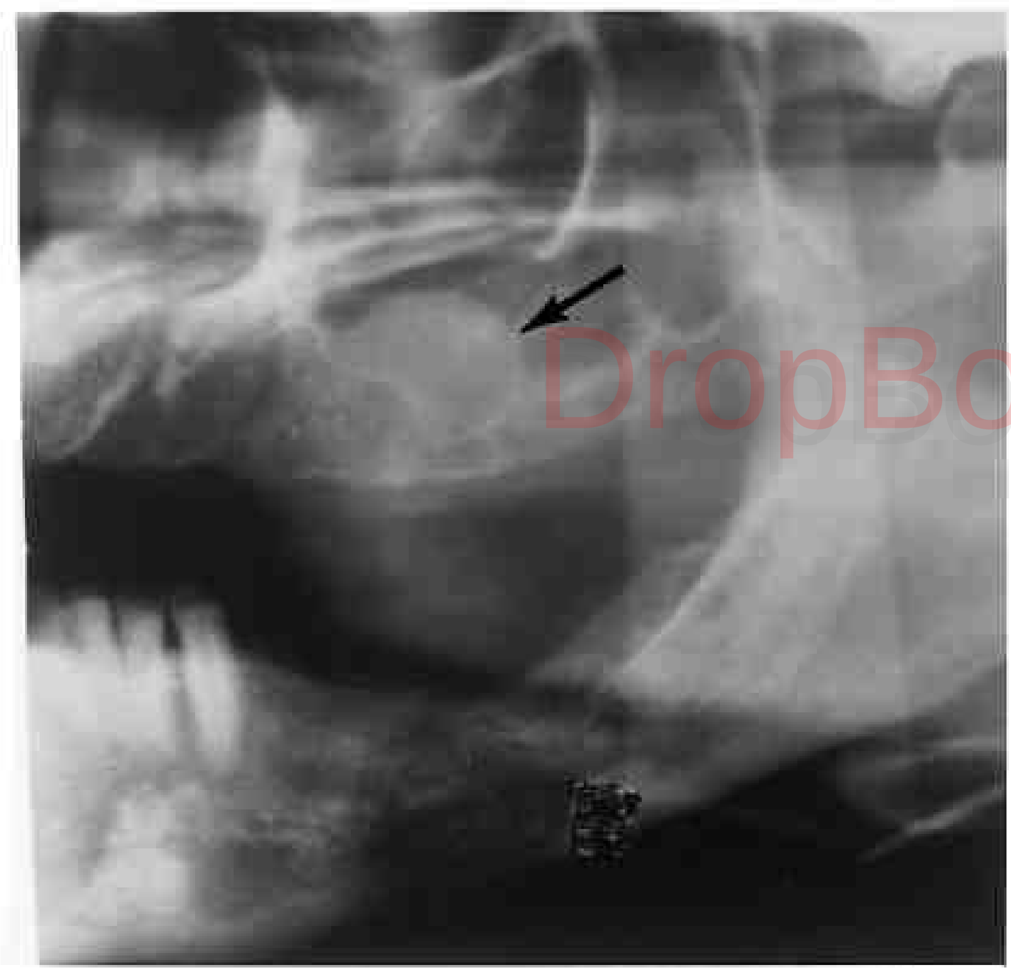


Fig. 17-14

Mucous retention cyst producing a dome-shaped soft tissue radiopacity emanating from the floor of the maxillary sinus. The cyst may disappear spontaneously due to rupture and may reappear after a few days.

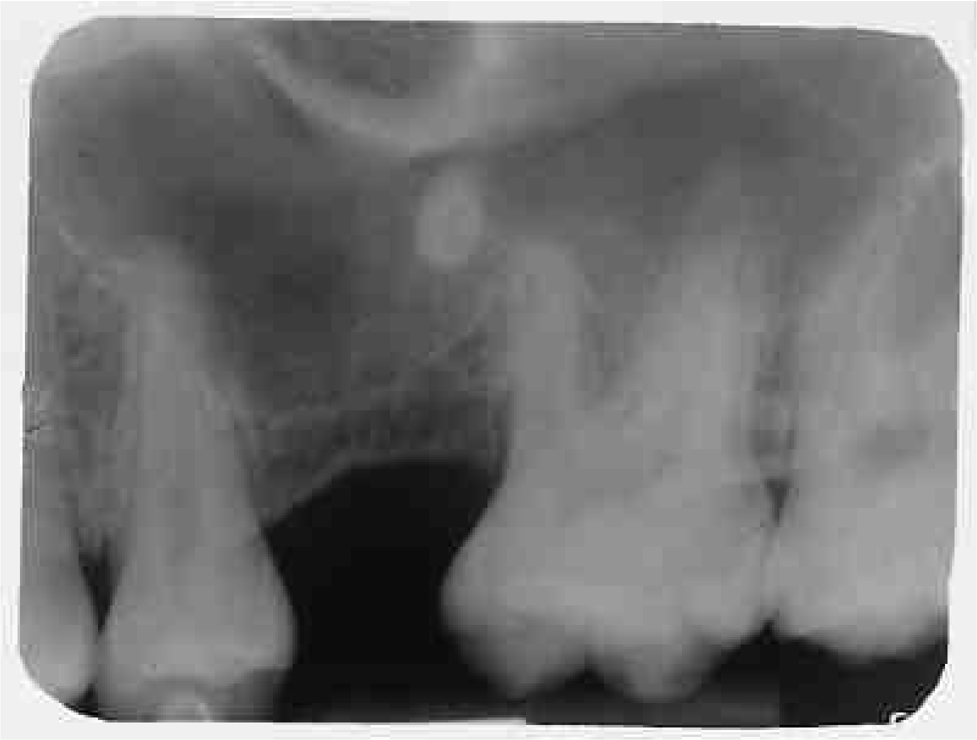


Fig. 17-15

A root tip of the maxillary first molar was accidentally pushed into the sinus at the time of tooth extraction. The root tip is asymptomatic and has been present for many years. A root tip in the sinus does not have a lamina dura around it.

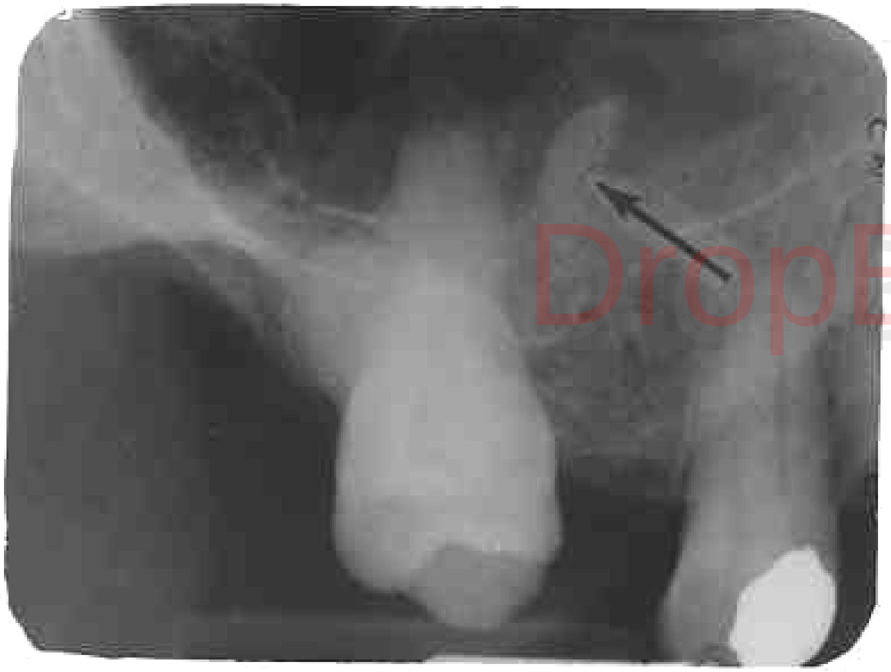
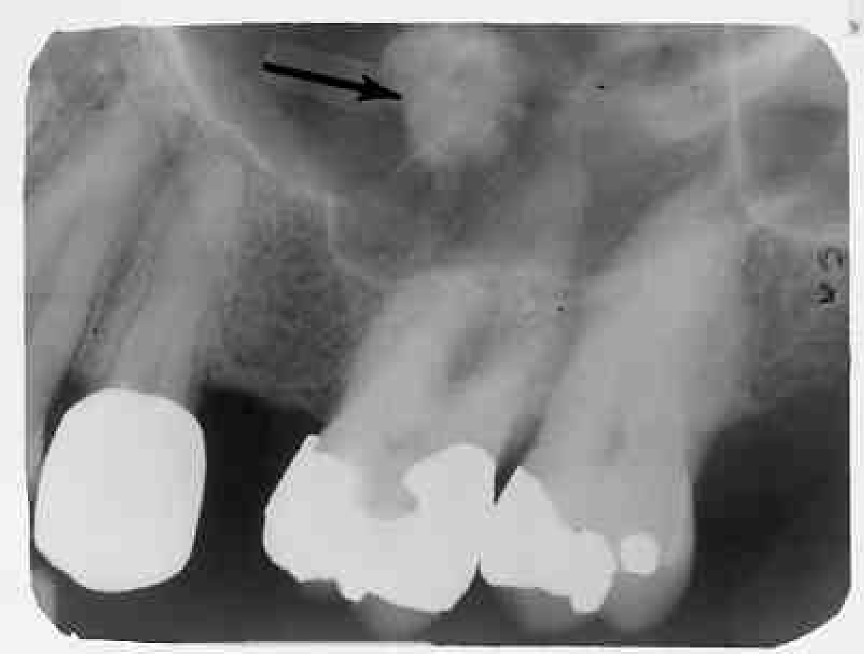


Fig. 17-16

Root tip of the extracted first molar accidentally pushed into the sinus. The root tip may change its position in the sinus with changes in patient's head position. It will not change its position when it is trapped between the mucosa and the floor of the sinus.

Fig. 17-17



Antrolith (stone) in the maxillary sinus. Antroliths are calcified masses found in the maxillary sinus. They are formed by deposition of calcific material on a nidus such as a root fragment, bone chip, foreign object, or a mass of stagnant mucus in sites of previous inflammation.

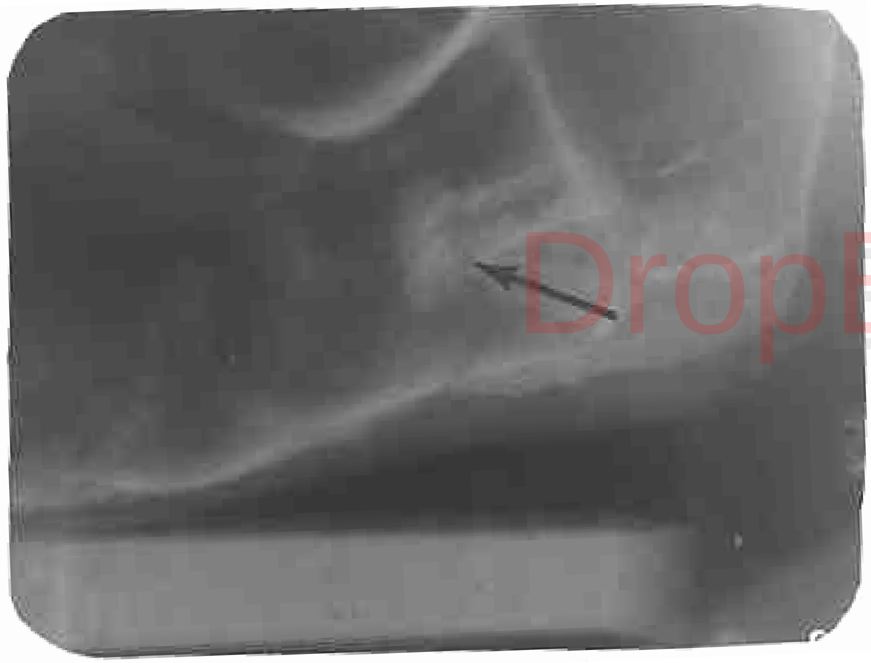


Fig. 17-18

Antrolith in the maxillary sinus.

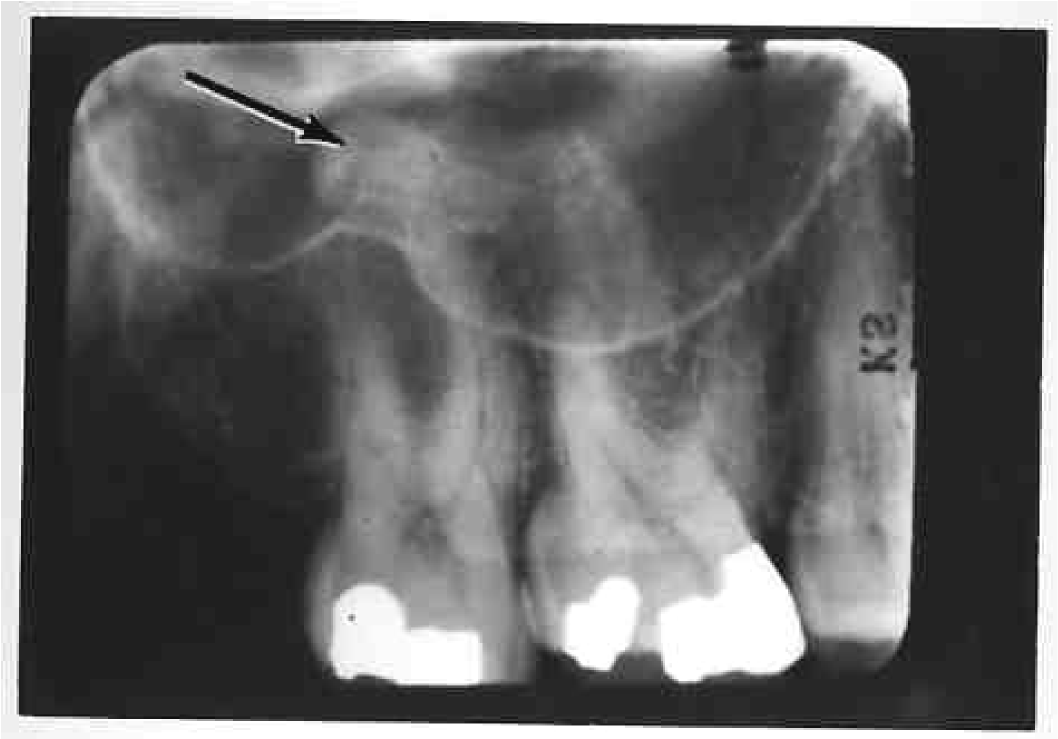


Fig. 17-19

Antrolith in the maxillary sinus.

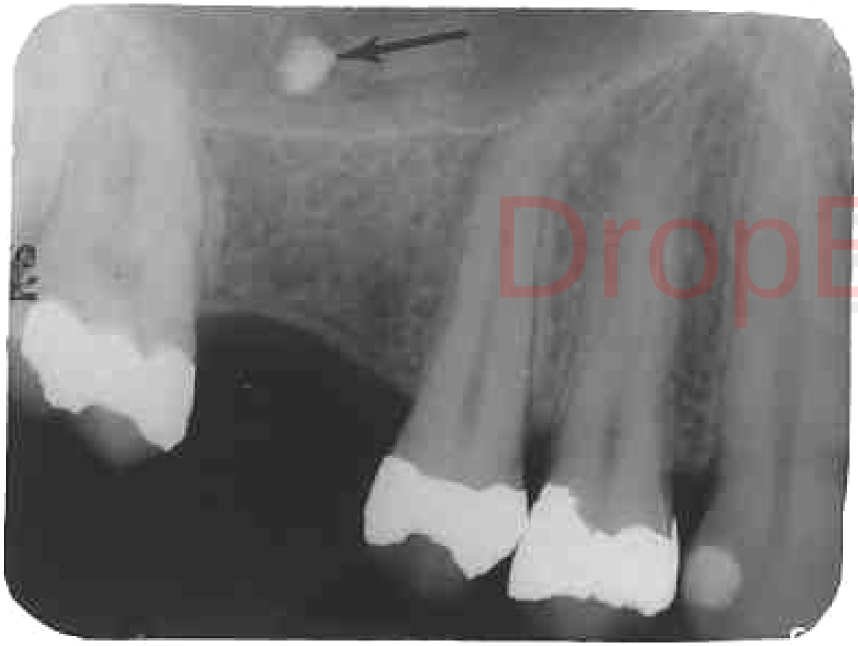


Fig. 17-20

Dental cement material inadvertently pushed into the sinus during endodontic treatment of the first molar before it was extracted. The peculiar radiopacity of the dental cement distinguishes it from an antrolith.

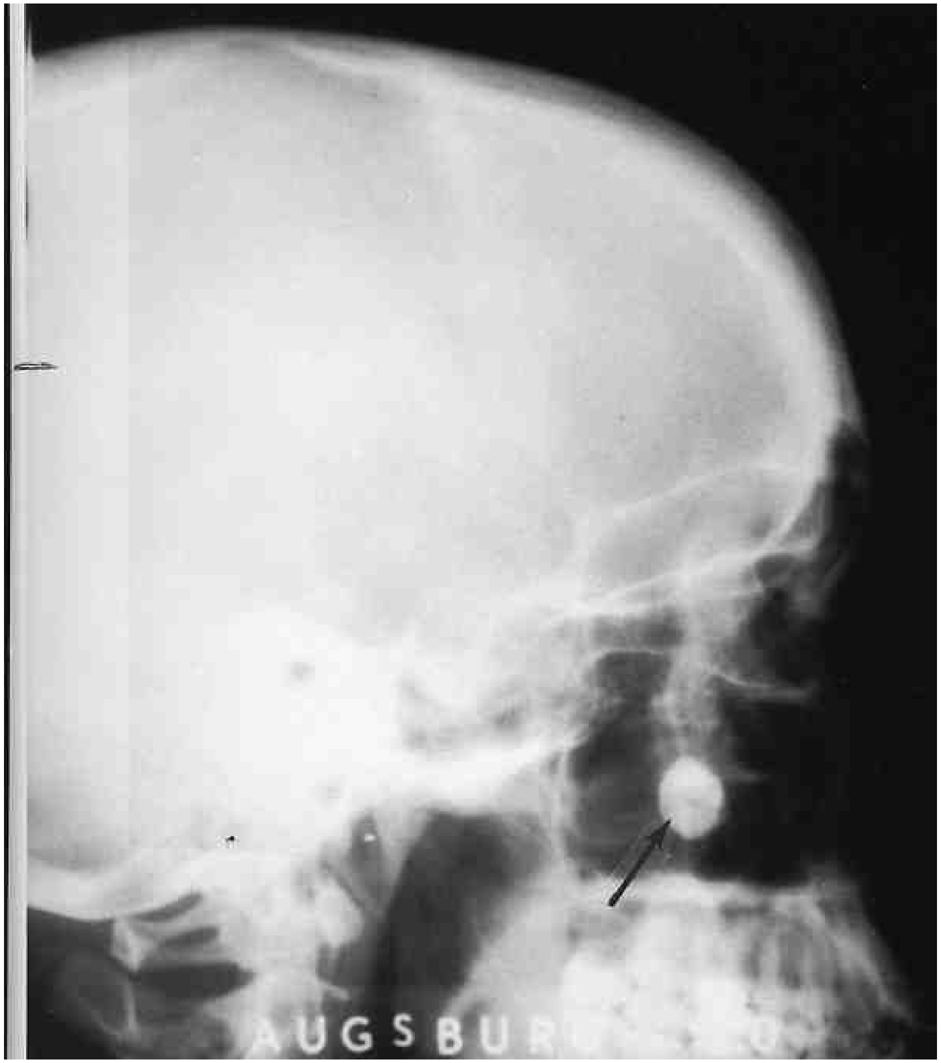
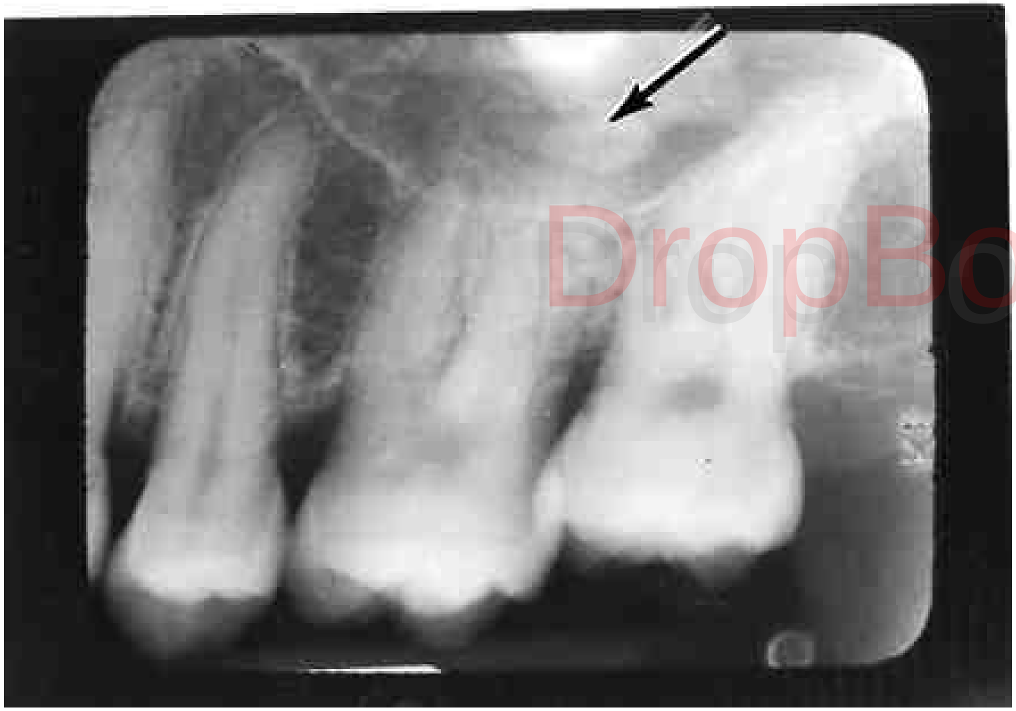


Fig. 17-21

Tooth in the maxillary sinus. Sometimes a tooth in the maxillary sinus may be associated with an odontogenic cyst in the sinus.

Fig. 17-22

A supernumerary microdont in the maxillary sinus.



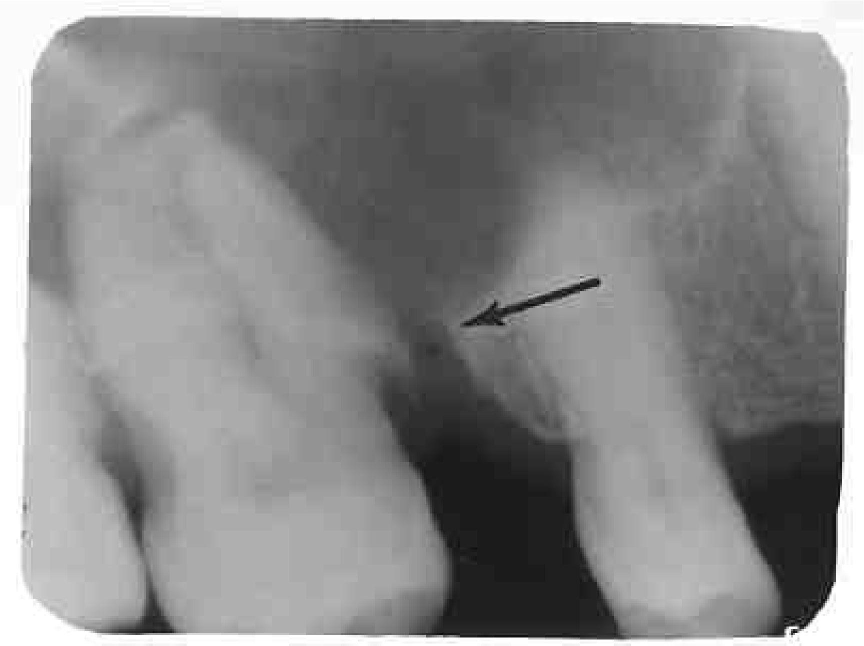


Fig. 17-23

Oro-antral fistula formed by a break in the floor of the maxillary sinus between the premolar and molar. It is a pathologic tract that connects the oral cavity to the maxillary sinus. The patient complained of regurgitation of food through the nose while eating. The patient also felt air entering his mouth during eating and smoking.

Sinus infection may result in postnasal drip.

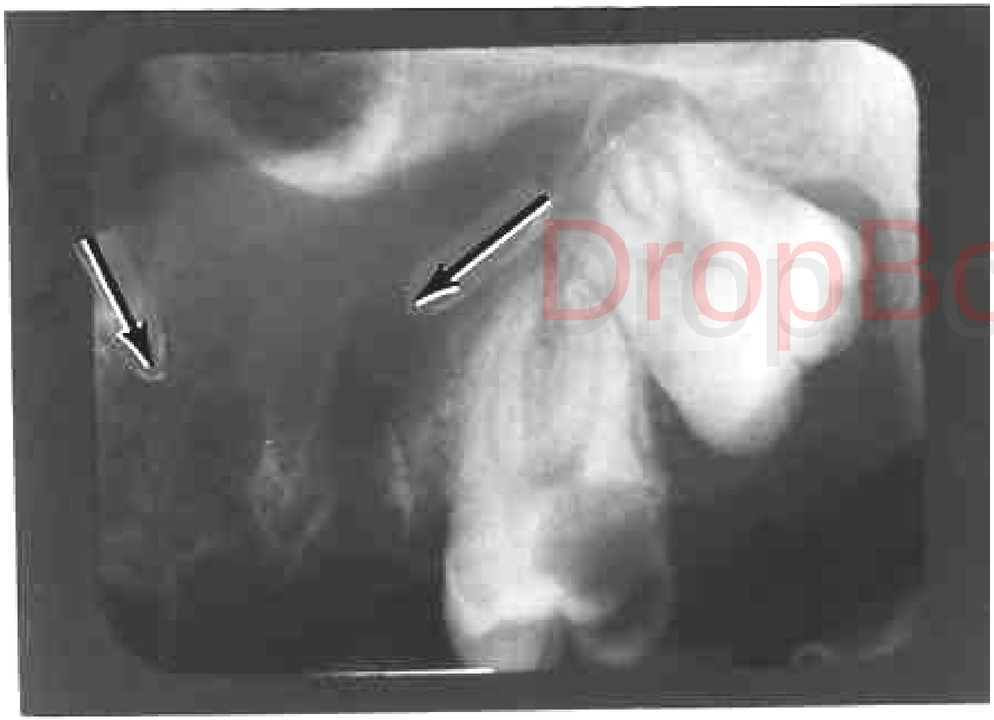


Fig. 17-24

Oro-antral fistula at the site of the extracted second premolar and first molar. Patient had the usual complaint of regurgitation of food through the nose.

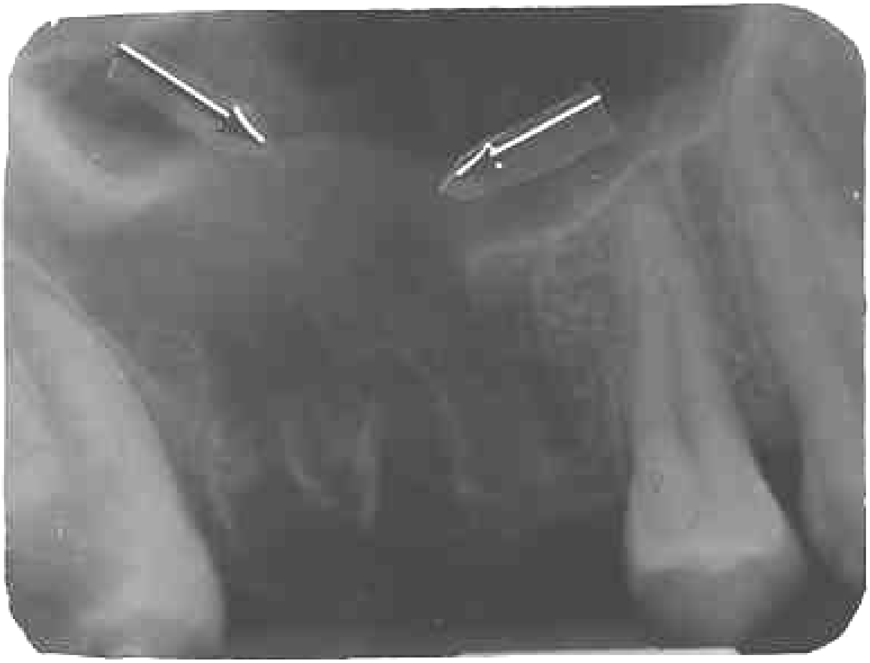
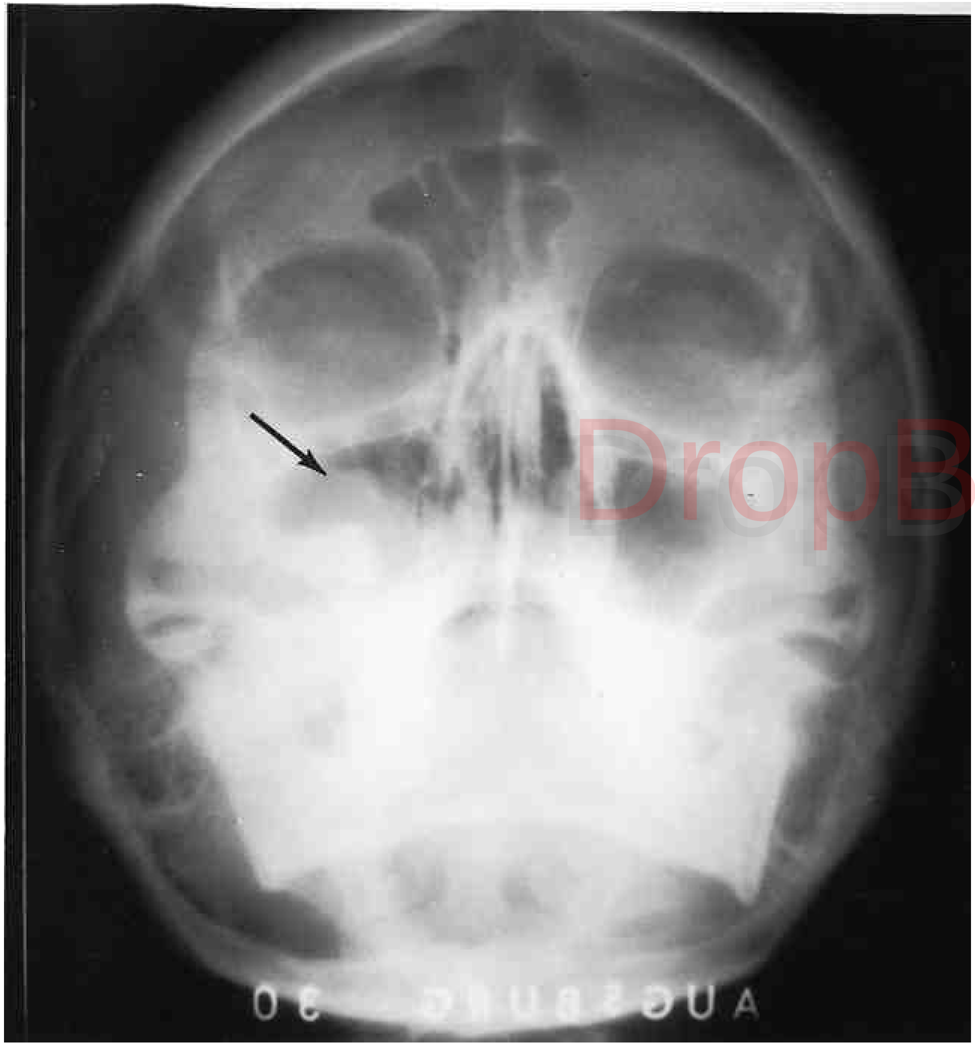


Fig. 17-25

Oro-antral fistula at the site of the extracted first molar and second premolar. The mucosa of the sinus has proliferated over the fistula (arrows).

Fig. 17-26



Waters' view showing a dentigerous cyst in the maxillary right sinus. A careful examination of the radiograph shows a tooth in the sinus. Any odontogenic cyst (primordial, dentigerous, radicular, or keratocyst) can encroach upon the sinus.

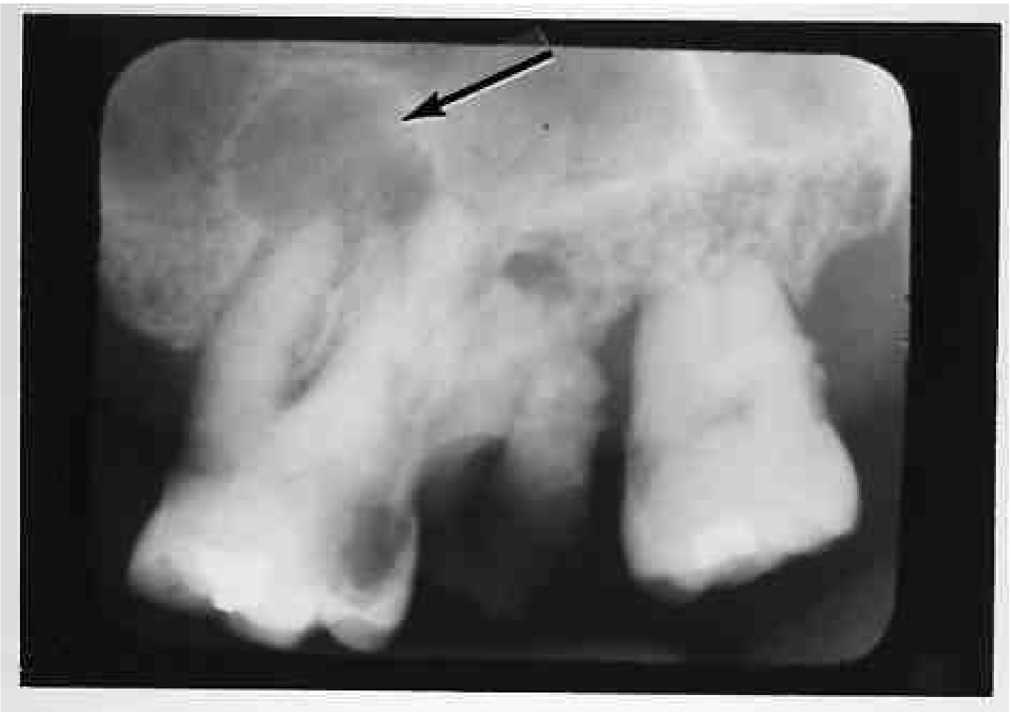


Fig. 17-27

A radicular cyst at the apices of the first molar and extending into the maxillary sinus.

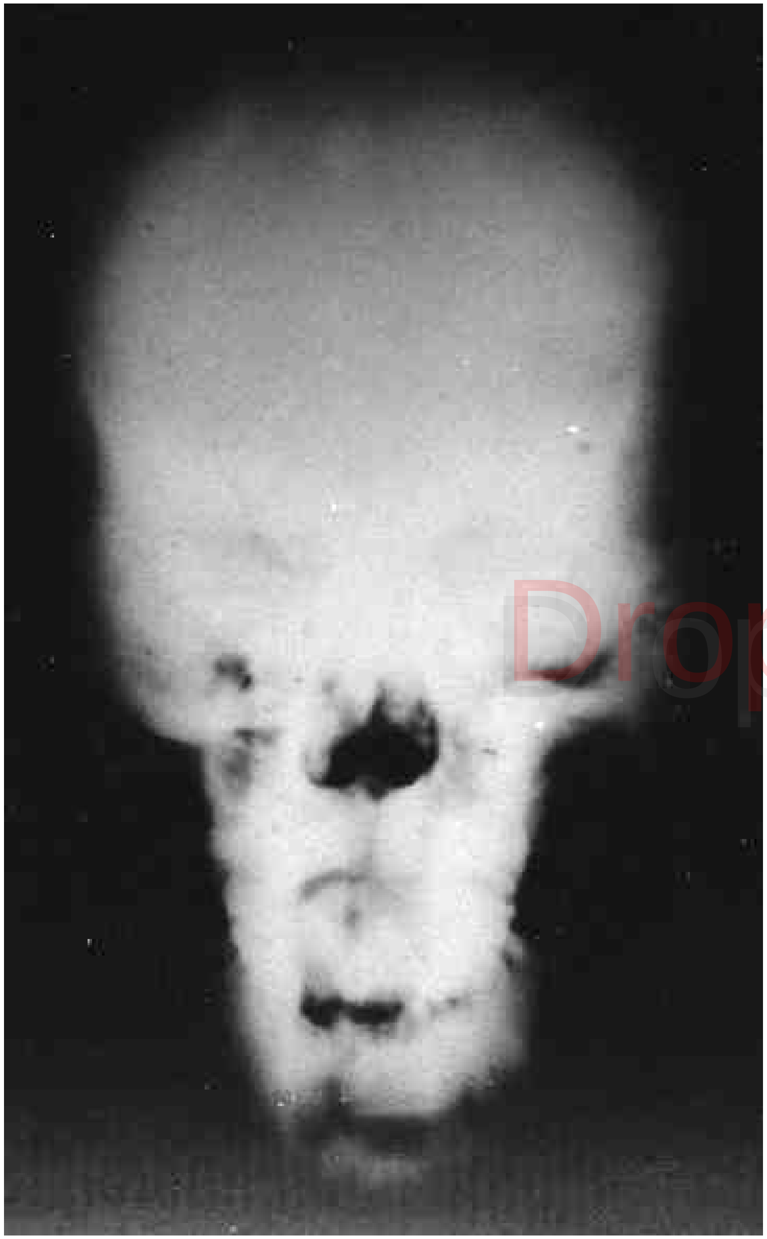


Fig. 17-28

Osteopetrosis showing excessive bone accumulation in the paranasal sinuses. All the paranasal sinuses are radiopaque.

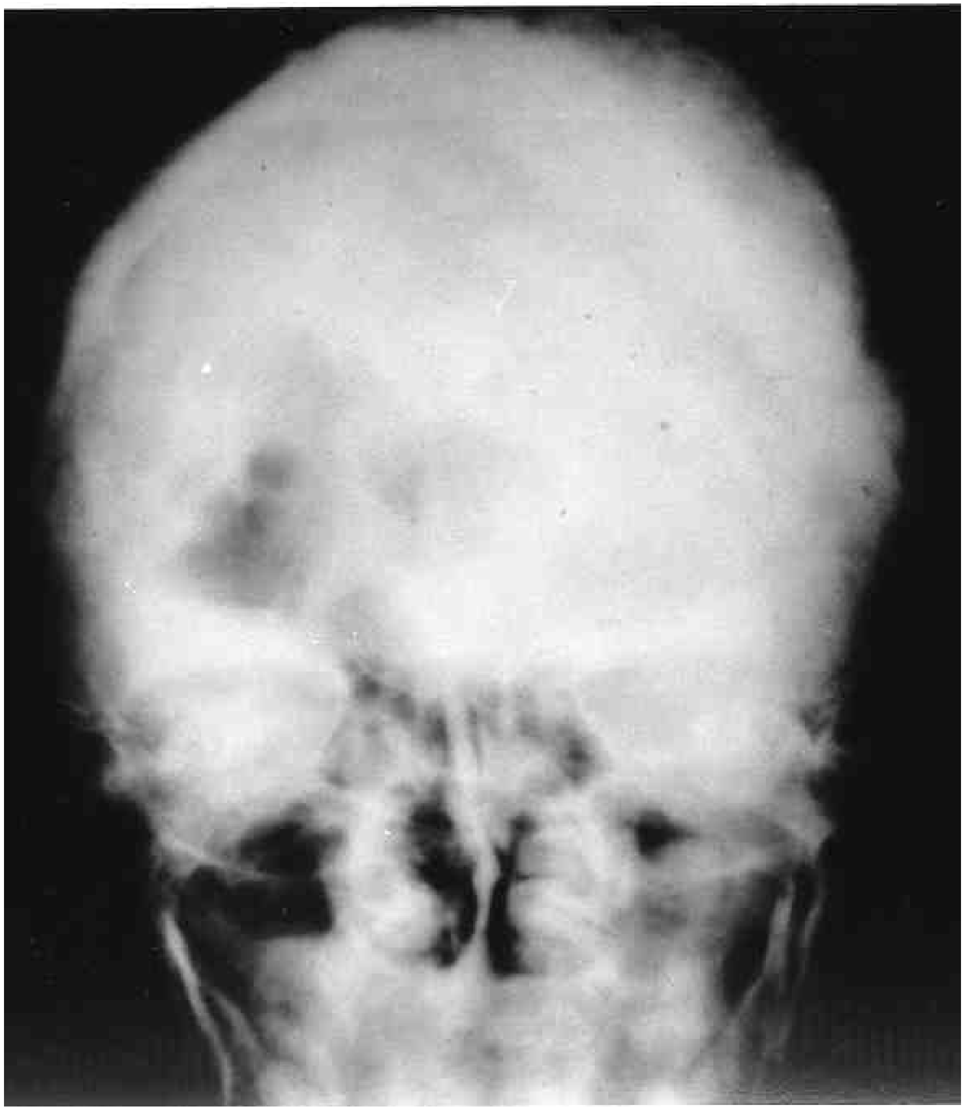


Fig. 17-29

Paget's disease showing abnormal bone which usually does not penetrate but encircles the sinus. Notice the cotton-wool appearance of the skull.

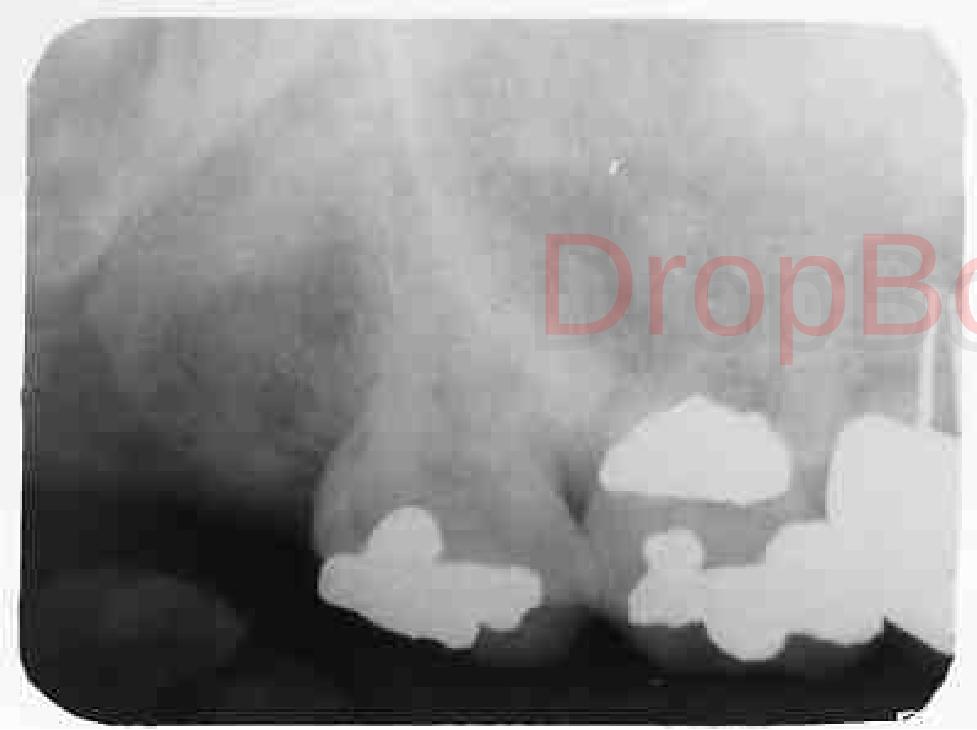


Fig. 17-30

Fibrous dysplasia has encroached upon and obliterated most of the sinus cavity. The lesion has a "ground glass" appearance.

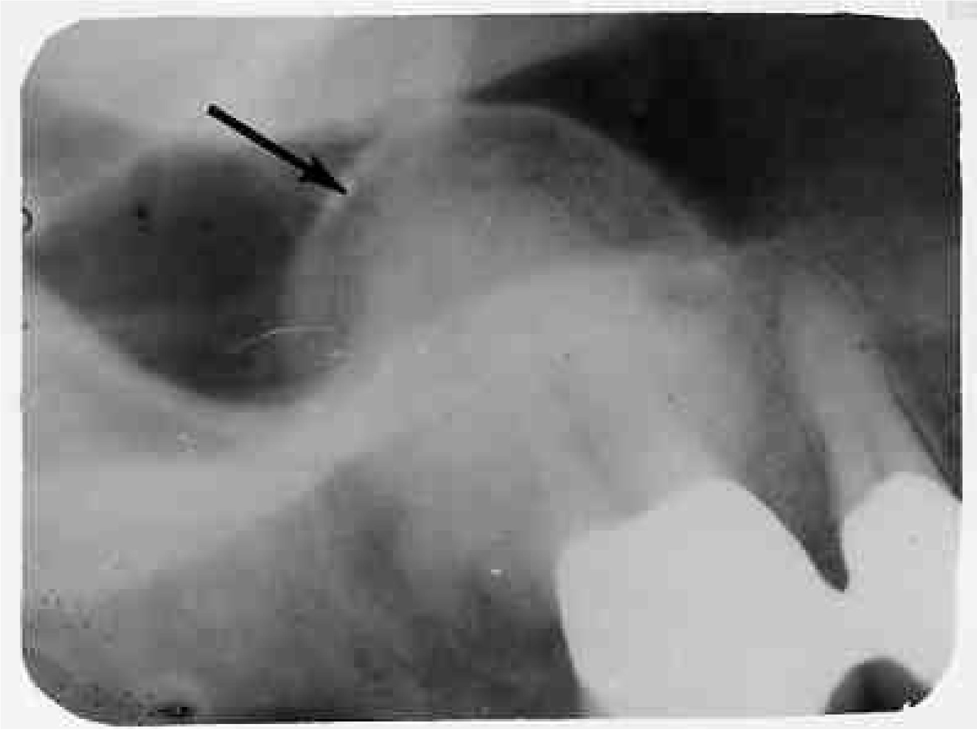


Fig. 17-31

Osteoma in the floor of the maxillary sinus may be misdiagnosed for a mucous retention cyst. Notice the distinguishing presence of the trabeculae in the lesion. Osteoma is the most common of the benign nonodontogenic tumors in the paranasal sinuses.

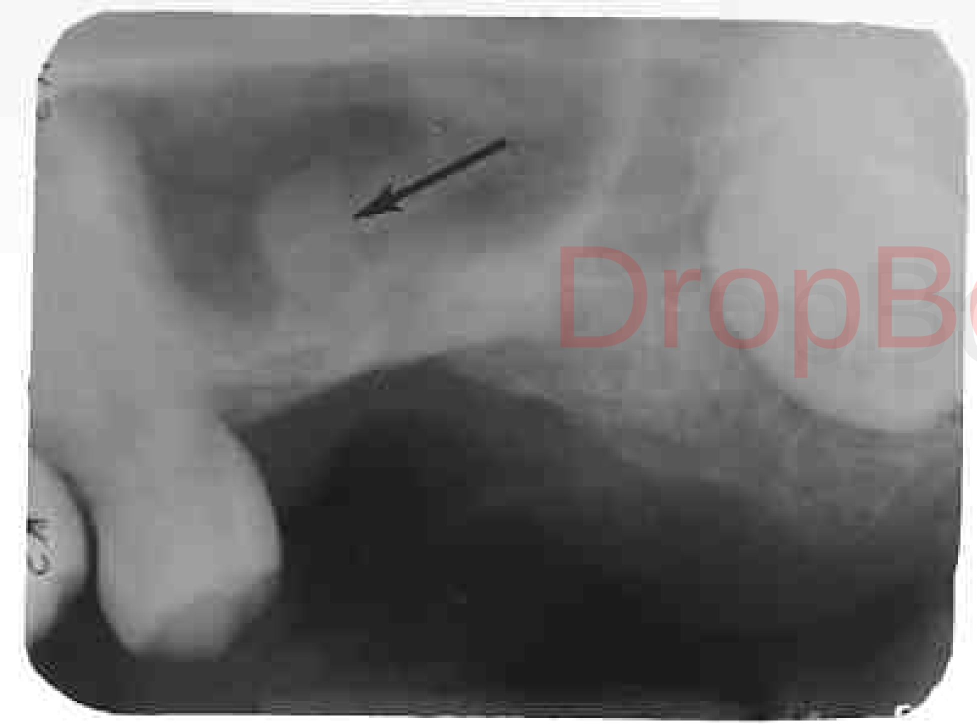
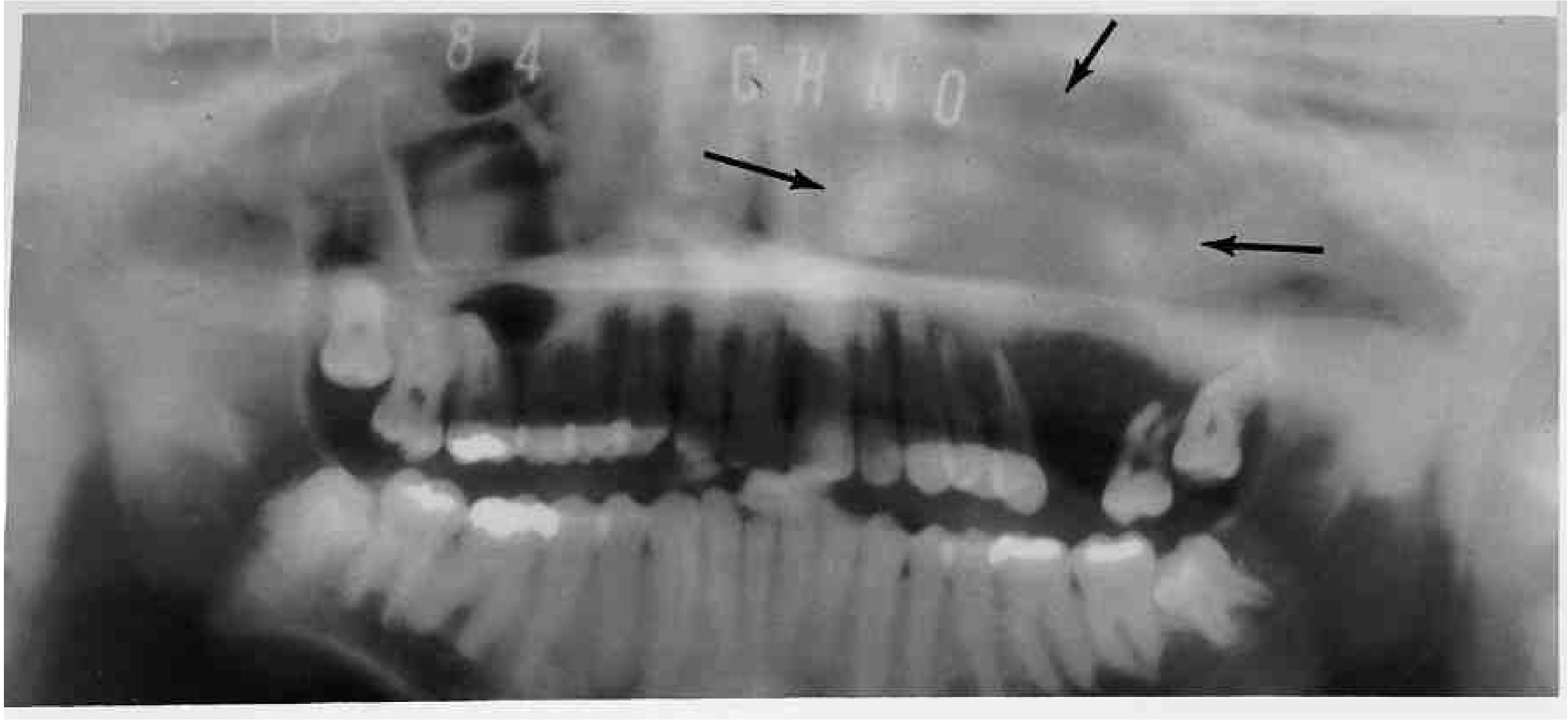


Fig. 17-32

Osteoma in the floor of the maxillary sinus.

Fig. 17-33

Ameloblastoma of the left maxillary sinus. The patient had pain, swelling, blurred vision and blockage of nose. Ameloblastoma is the most common benign odontogenic tumor affecting the paranasal sinuses.



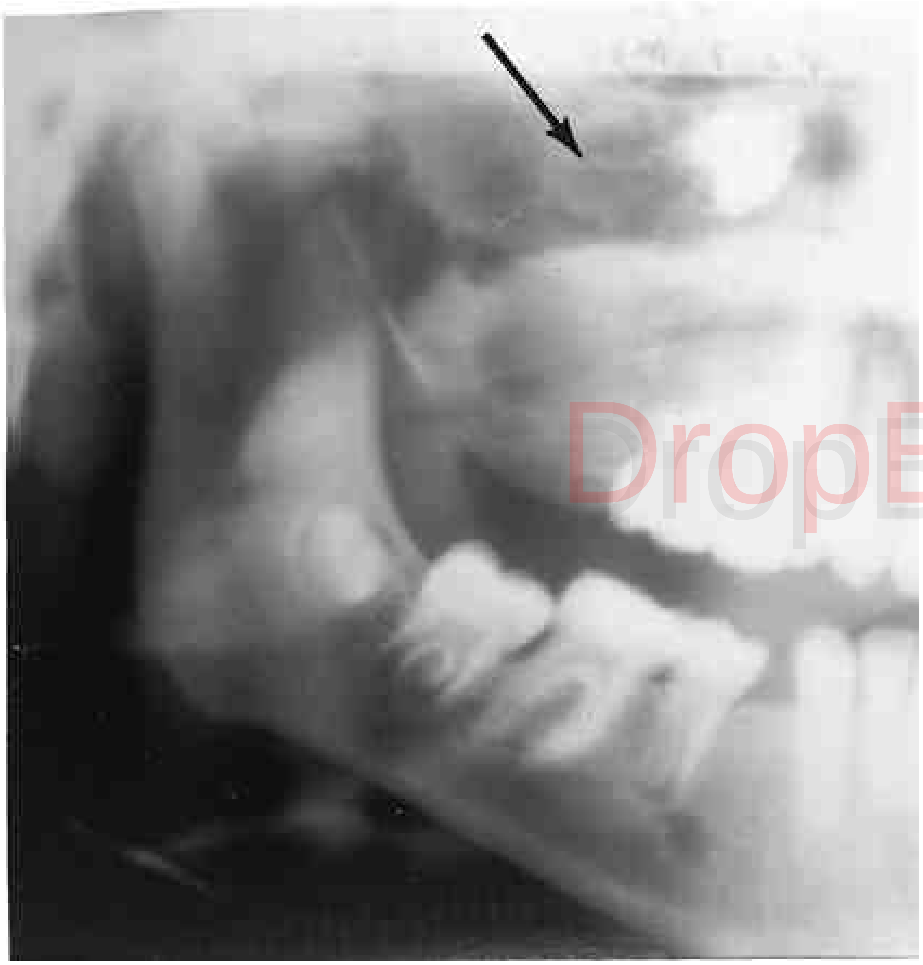


Fig. 17-34

Ameloblastic fibro-odontoma in the left maxillary sinus in a 12 year old patient. There are radiopacities in the radiolucency associated with the displaced maxillary molar.

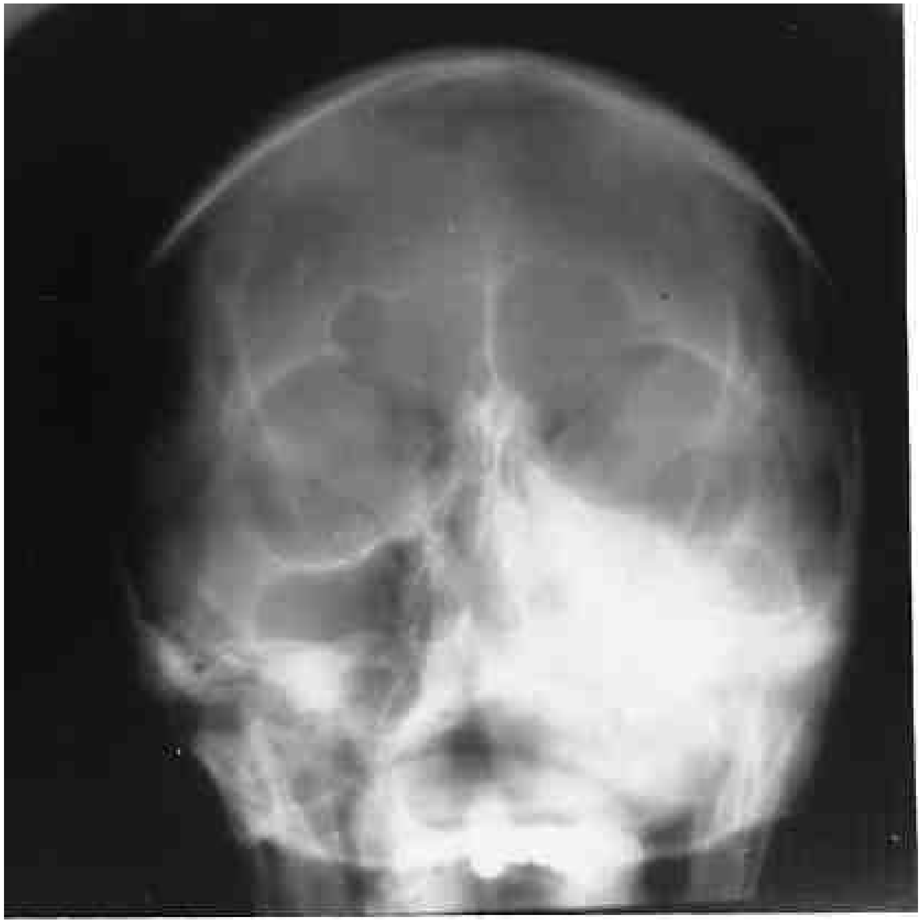


Fig. 17-35

Waters' view showing a cementifying fibroma (ossifying fibroma) occluding, and producing expansion of the whole left maxillary sinus. A similar appearance may sometimes be seen in fibrous dysplasia.

Fig. 17-36

Odontogenic myxoma in the right maxillary sinus.

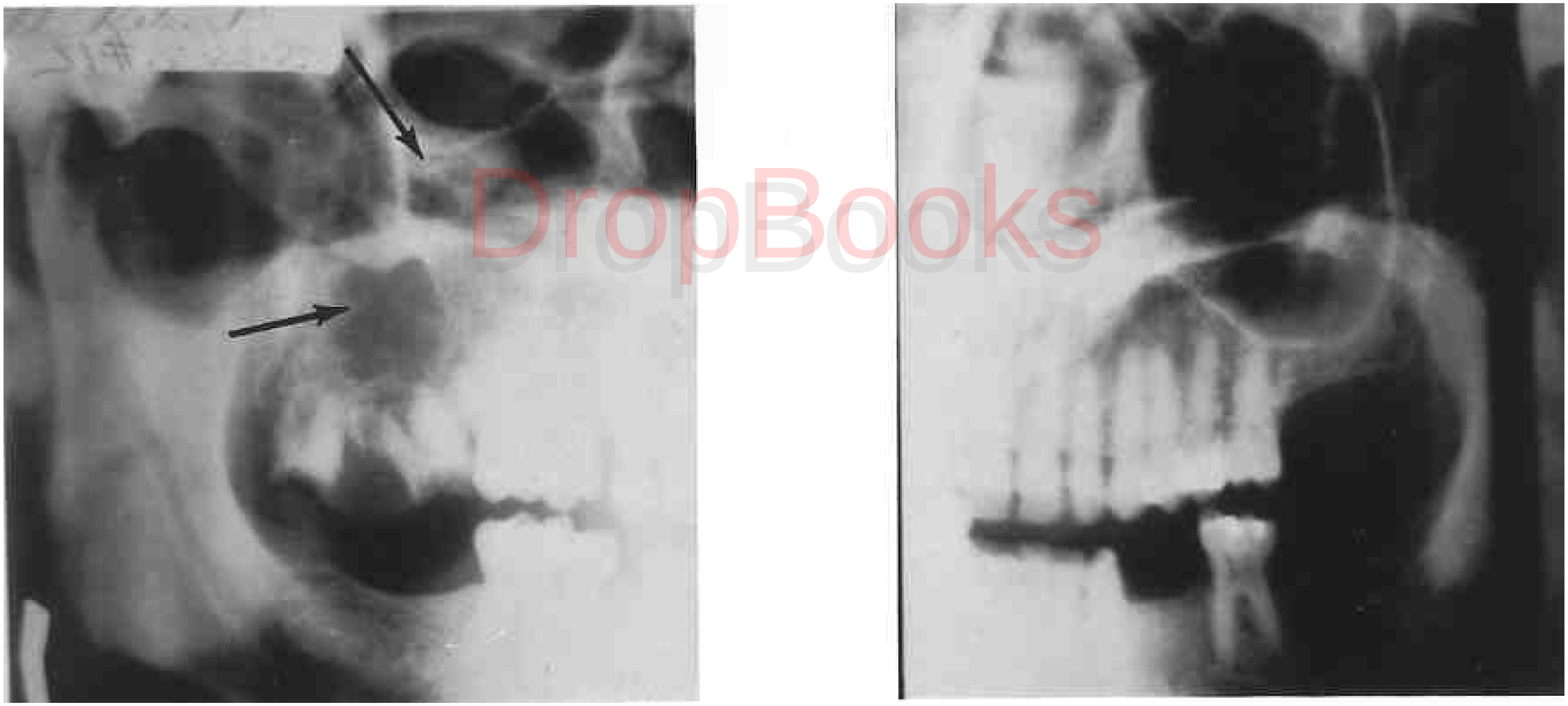
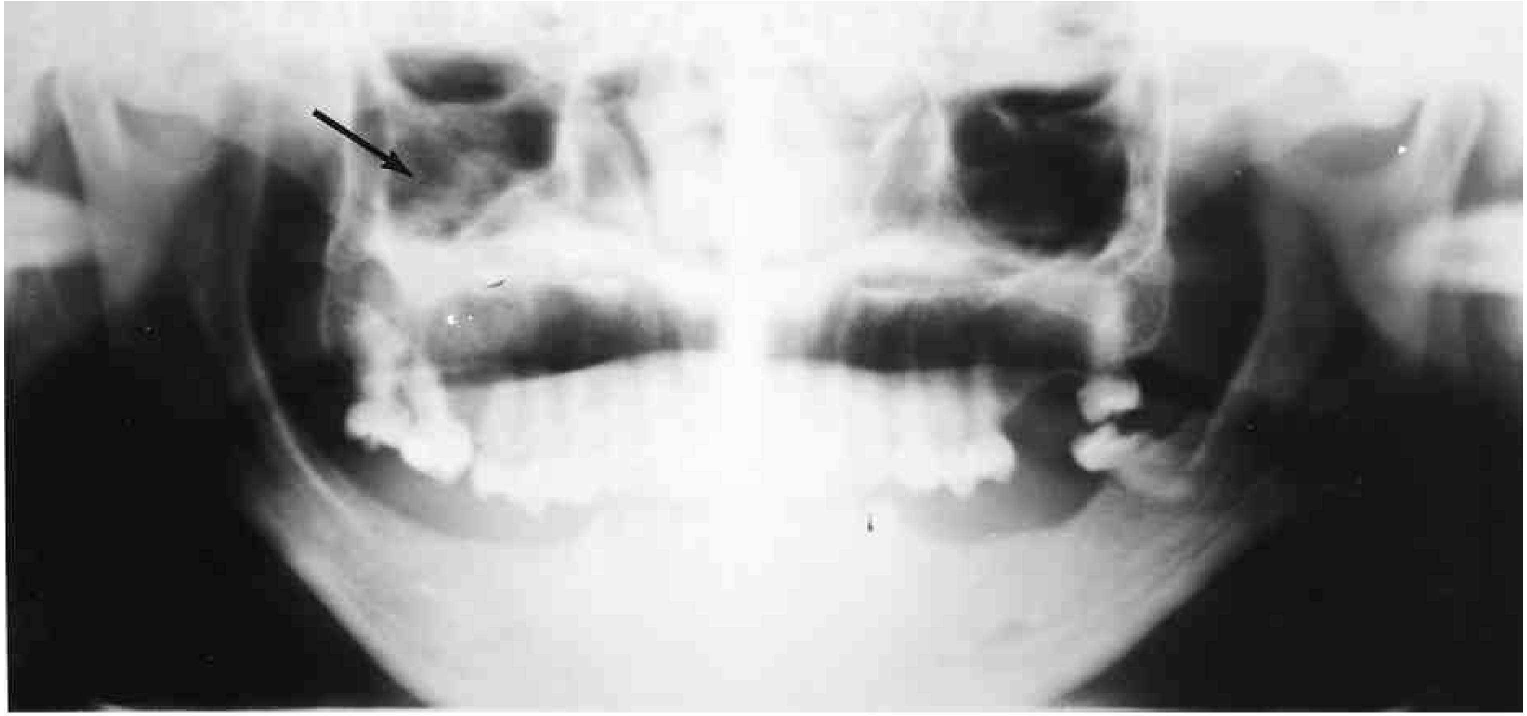


Fig. 17-37

Squamous cell carcinoma in the right maxillary sinus producing destruction of the sinus floor and walls. Clinically the lesion extended into the oral soft tissues. Squamous cell carcinoma is the most common malignant tumor of the paranasal sinuses.



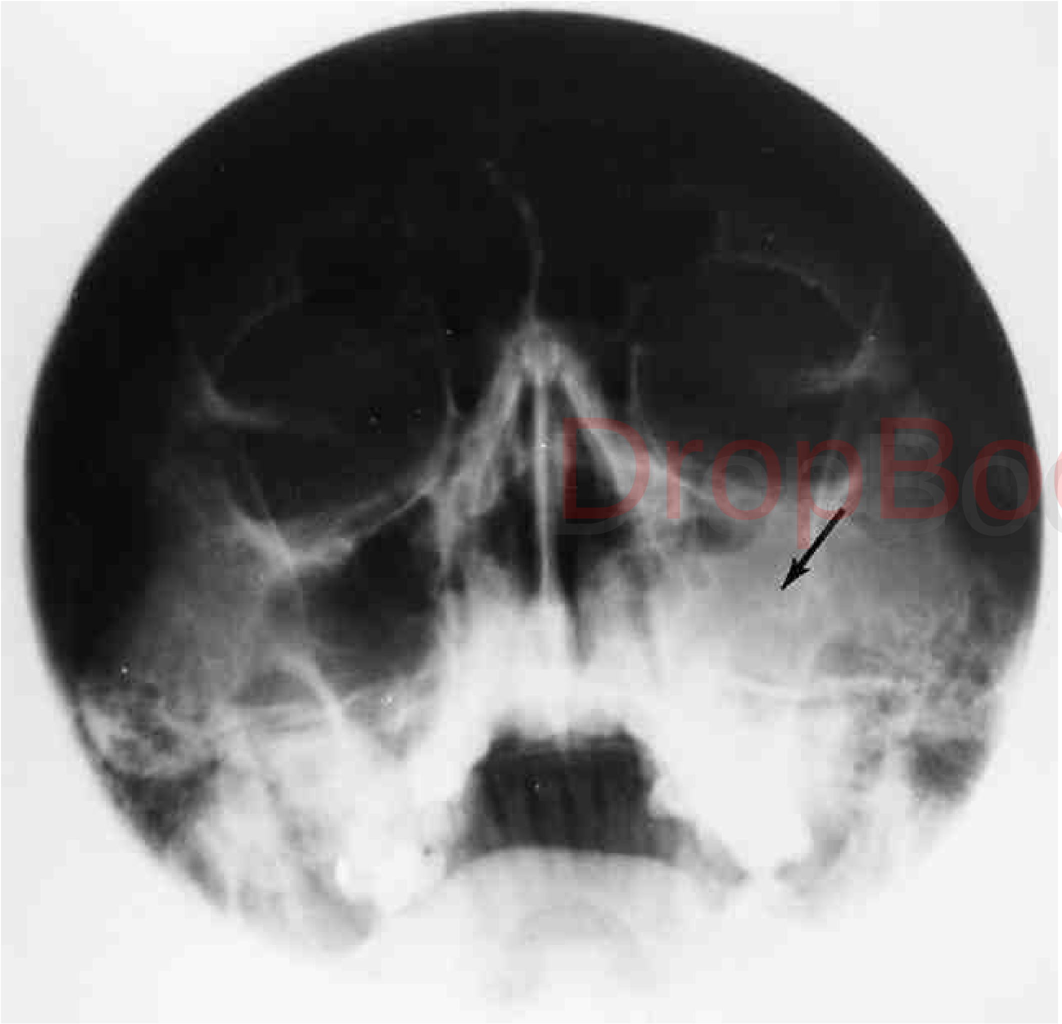


Fig. 17-38

Squamous cell carcinoma of the left maxillary sinus as seen on a Waters' projection. Notice the destruction (disappearance) of the walls and floor of the sinus.

Fig. 17-39

Osteosarcoma showing expansion of the left maxillary sinus. A squamous cell carcinoma could also give a similar radiographic appearance and expansion. Notice the destruction (disappearance) of the walls and floor of the sinus.